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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,379	06/22/2001	Peter Dannenberg	GK-GEY-1112/	7202

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EXAMINER

CHANG, AUDREY Y

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/830,379

Applicant(s)

DANNENBERG ET AL.

Examiner

Audrey Y. Chang

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-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 12,14,16,17 and 19-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12,14,16,17 and 19-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Remark

- This Office Action is in response to applicant's amendment filed on September 2, 2003, which has been entered into the file.
- The applicant has not submitted any amendment to the claims.
- Claims 12, 14, 16-17, and 19-27 remain pending in this application.

Claim Objections

1. **Claims 23 –27 are objected to because of the following informalities:**

(1) The phrase “the inner sides and outer sides of the light integrator form a cavity” recited in claim 23 is confusing and indefinite. Since firstly, the “inner sides” and the “outer sides” lack proper antecedent basis from earlier part of the claim. Secondly, it is not clear what are these inner sides and outer sides and how can they form the cavity. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 12, 14, 16-17, 19-20, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent issued to Iseda et al (JP 36305802A) in view of the patent issued to Farmiga (PN. 5,828, 505) and Takahashi et al (PN. 5,735,793).**

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Iseda et al teaches a *light guiding device*, serves as the light integrator, having a *cavity* with light input surface and light exiting surface, wherein the cavity is defined and formed by having *two sheets* of *glasses* (1), each is coated with a metallic coating (2) at the inner surface of the glass sheet wherein the metallic coatings serve as the reflective coatings, fastened to *two spacers* (3, please see Figure 1).

The method for forming the light guiding device is implicitly included in the teachings. Iseda et al in particular teaches that the metallic coatings (2) are formed on the entire inner surface of the glass sheets which implies that the reflective coatings are placed on the inner surfaces *before* the assembly of the light guiding device. Iseda et al also teaches that the two glass sheets having an “I” geometric shape and the two spacers having a “T” geometric shape such that the projection of the glass sheets *engaged* with the *cutouts* of the *spacers* as the parts are assembled to form the light guiding device. The surfaces of the light guiding device are planar and the light guiding device having shape of a geometric prism with rectangular top and bottom surface and the rectangular input and out surface, (please see Figure 1 of Iseda et al).

This reference has met all the limitations of the claims with the exception that it does not teach **explicitly** that the inner surface of the spacers (3) also are coated with reflective coatings. However such feature is either inherently met or an obvious modification to one skilled in the art since it is a standard practice in the art to make *all the inner surfaces* of the light guiding cavity with reflective coatings, such as demonstrated by the teachings of **Farmiga**, (please see Figures 1-5 with the mirrored slabs for forming the cavity), for the benefit of making all of the inner surfaces of the cavity capable of guiding light through the cavity via reflections.

It is implicitly true that the light guiding cavity of the Iseda et al, is formed by fastening the glass sheets and the spacers together. These references however do not teach explicitly to have the cavity being covered with a shrink tubing. However using shrink tubing as a fastening means for holding two optical elements together in order to form optical cavity or simply to cover an optical means is very well known

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in the art as demonstrated by the teachings of **Takahashi et al.** *Takahashi et al* teaches a **heat shrinking tube** (300, Figure 8) that may be *wrapped* around the junction of a suction tube (100) and a pipe (132) so that the suction tube and the pipe are jointed and fastened to form the desired *optical pipe with a cavity* within, (please see Figure 8, column 14, lines 36-49). Takahashi et al teaches that the shrinking tube is shrunk so that it applied certain strength to the junction. It would then have been obvious to one skilled in the art to apply the teachings of Takahashi et al as an fastening means to fasten glass sheets with the spacers of the light guiding device of Iseda et al for the benefit of providing a fastening means with *no filth-collecting gapes* formed in the interior of the joint of the elements and the cavity, which implicitly makes the cavity or the light guiding device with good *light-proof* property. With regard to the positions of applying the heat shrinking tube, Takahashi et al teaches that the shrinking tube is placed between the input surface and exiting surface of the light guide.

4. **Claims 21-22 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent issued to Iseda et al and US patents issued to Farmiga and Takahashi et al as applied to claims 14 and 23 above, and further in view of the patent issued to Levis et al, (PN. 5,902,033).**

The light guiding device taught by **Iseda et al** in combination with the teachings of **Farmiga** and **Takahashi et al** as described for claims 14 and 23 above have met all the limitations of the claims.

With regard to claims 21-22 and 26-27, these references do not teach explicitly to use the beam shaper construction to illuminate a matrix of image display elements. However it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Madham, 2 USPQ2d 1647 (1987). Furthermore, it is rather well known in the art to use the tube typed beam shaper to illuminate matrix of image elements as demonstrated by the teachings of **Levis et al**

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wherein the light pipe integrator (15) is utilized to illuminate a light modulator panel such as *liquid crystal image display* (21) to create images, (please see Figures 1 and 2). It is well known in the art that light modulator panel such as LCD has a matrix form of image elements. It would then have been obvious to one skilled in the art to apply the teachings of Levis et al to apply the light guiding device of Iseda et al to illuminate a light modulator panel for the benefit of providing an image projection device. Although these references do not teach explicitly that the light modulator panel is a matrix of tilted mirrors however such arrangement which known in the art as deformable micromirror device (DMD) is a standard image display device in the art such modification would therefore have been an obvious matter of design choice to one skilled in the art.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. **Claims 12, 14, 16-17, and 19-27 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,625,380.** Although the conflicting claims are not identical, they are not patentably distinct from each other because they both disclose a light integrator or rod, and the method of making it, that comprises at least two side parts such that the edge portions of one side parts (i.e. projection of one part as in the instant application) rests on (or engaging) the side surface of a central bar of the other side part, (i.e. the cutout of the other part as in the instant application).

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Response to Arguments

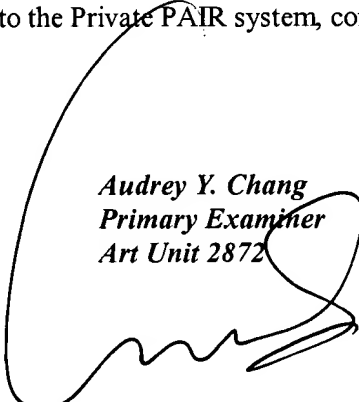
7. Applicant's arguments with respect to pending claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

***Audrey Y. Chang
Primary Examiner
Art Unit 2872***



A. Chang, Ph.D.